

## **HIGH-SPEED ROUTER WITH SINGLE BACKPLANE DISTRIBUTING BOTH POWER AND SIGNALING**

5

### **ABSTRACT OF THE DISCLOSURE**

A high-speed, high-power modular router is disclosed. As opposed to conventional designs using optical backplane signaling and/or bus bars for power distribution, the disclosed embodiments combine high-power, low-noise power distribution with high-speed signal routing in a common backplane. Disclosed backplane features allow backplane signaling at 2.5 Gbps or greater on electrical differential pairs distributed on multiple high-speed signaling layers. Relatively thick power distribution layers are embedded within the backplane, shielded from the high-speed signaling layers by digital ground layers and other shielding features. A router using such a backplane provides a level of performance and economy that is believed to be unattainable by the prior art.